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Arctiinae from African expeditions of V. Kovtunovich & P. Ustjuzhanin in 2009-2011, with description of new taxa and taxonomic notes

(Lepidoptera, Arctiidae)

by

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Abstract: 20 species of Arctiinae were collected in the southern half of Africa by V. Kovtunovich & P. Ustjuzhanin in 2009-2011, among them *Agaltara nebulosa* de Toulgoët, 1979, *Karschiola holoclera* (Karsch, 1894), *Ustjuzhania lineata malawica* Dubatolov, 2009, *U. chionea* (Hampson, 1900), *Eyralpenus scioana* (Oberthür, [1880]), *Rhodogastria similis* (Möschler, 1884), *Teracotona* (s. str.) *rhodopaea* (Walker, [1865]), *Leucaloa nyasica* (Hampson, 1911), *Ilemodes astriga* Hampson, 1916 from Zimbabwe, *Seydelia ellioti* (Butler, 1896), "*Teracotona*" *homeyeri* Rothschild, 1910 from Malawi, *Ilemodes isogyna* Romieux, 1935 from Malawi and Zimbabwe. *Eyralpenus* (*Pareyralpenus*) *meinhofi* (Bartel, 1903) is synonymized with *E. atricrures* (Hampson, 1916), *E. melanocera* (Hampson, 1916), *E. metaxantha* (Hampson, 1920) based on a variability of wing pattern and identical ♂ genitalia structure. *Diacrisia butti* Rothschild, 1910 is transferred to the genus *Leucaloa* Butler, 1875. *Coscinia aethiopica* Kühne, 2010 is separated into own genus ***Afrocoscinia* gen. nov.**, and transferred into Nyctemerini. New species and subspecies are described: *Paralpenus wintgensi* ***zimbabweiensis* subsp. nov.** from Zimbabwe, *Popoudina* ***kovtunovitchi* spec. nov.** from Zimbabwe, *Eyralpenus* ***kovtunovitchi* spec. nov.** and *Teracotona* (*Neoteracotona*) ***kovtunovitchi* spec. nov.** from Malawi, *Afrospilarctia* ***dentivalva* spec. nov.** from Zambia.

In December 2009 -January 2010, and November 2010 -January 2011, Dr. Vasilii Kovtunovitch and Dr. Peter Ustjuzhanin carried out new expeditions to South Africa north to Malawi. Along with collecting plume-moth (Pterophoridae) they obtained a number of tiger-moths (Arctiinae). Some species collected by them should be assigned to new genera or species. The annotated list of species is shown below. Well known faunistic records are omitted. All specimens mentioned in this article, including holotypes and paratypes, were collected by V. Kovtunovich & P. Ustjuzhanin and are deposited in Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals, Siberian Branch of the Russian Academy of Sciences (Novosibirsk, Russia) (SZMN).

Afrocoscinia gen. nov.

Type species: *Coscinia aethiopica* Kühne, 2010.

Description: Palpi straight, long, nearly equal to the head length. Antennae long straight, branches directed nearly along antennae stem. Eyes naked, large, strongly bulbous. Wing shape similar to species of *Coscinia* Hübner, [1819] and *Spiris* Hübner, [1819]: forewings narrow, hindwings broad. Fore tibiae simple without an apical spur. Middle tibiae with one pair, hind tibiae with two pairs of thin spurs.

♂ genitalia (fig. 1): Uncus robust but thin, horn-like, proximally with an U-shape fork. Tegumen broad. Juxta small. Valvae trapezoid, without any membranose part or a separate lobe. Its external half better scleritized, apically with a broad fold. Saccus short. Aedeagus small, straight.

♀ genitalia (Kühne, 2010): Posterior apophyses as long as segment width; anterior apophyses short; VIII segment narrow, dorsally less sclerotized; ostium membranous, situated on VIII sternite; ductus slightly curved, membranous; bursa pearshaped.

Remarks: The new genus resembles the Palearctic *Coscinia* Hbn. and *Spiris* Hbn. However, this affinity is only superficial. The antennae branches are very different - they are straight and directed along the antennae stem in the new genus, while in *Coscinia* species the antenna branches are slightly curved looking as if there is a duct between branches. The palpi of *Coscinia-Spiris* species are very small, while long in the new species. The eyes are also noticeably larger than in the Paleactic *Coscinia-Spiris* species, probably indicating night-flying activity, not day-flying as in the Palearctic *Coscinia-Spiris-Epimydia* species. But the most remarkable difference is found in the ♂ genitalia structure. The valves of the new genus lack any membraneous part present in all *Coscinia-Spiris-Epimydia* species, as in all other members of the tribe *Callimorphini*. In the ♀ genitalia, the bursa copulatrix of the new genus lacks any sclerotization, while in *Coscinia cribraria* (Linnaeus, 1758) there is a broad sclerotized transversal band covered with spines on the inner side and two less sclerotized oval signae. These characters clearly show that *Afrocoscinia aethiopica* (Kühne, 2010) **comb. nov.** is not congeneric to *Coscinia* species, and is not a member of Callimorphini. Most probably, it is a strange member of Nyctemerini that are widely distributed in Afrotropics.

Afrocoscinia aethiopica (Kühne, 2010) **comb. nov.** (col. pl. 1: 1)

Coscinia aethiopica Kühne, 2010, Esperiana **5**: 436, pl. 26: 7-8, p. 450, fig. *C. aethiopica*.

Material: South Africa: 1 ♂, North Cape, 5 km SE of Springbok, Koperberg farm, 29° 02‘ S, 17° 55’ E, 760 m, 3.-4.X.2009.

Remarks: the species was hitherto known only from the original description; the type material was collected in different places of the western parts of North Cape and Cape Provinces.

Agaltara de Toulgoët, 1979

Bull. Soc. Ent. France **83**: 223. Type species: *Agaltara nebulosa* de Toulgoët, 1979.

Agaltara nebulosa de Toulgoët, 1979 (col. pl. 1: 2)

Bull. Soc. Ent. France **83**: 223-224.

Material: Malawi: 1 ♂, North Malawi, Chitipa District, Mughesse Forest, 60 km NW Chitipa, 09° 39‘ S, 33° 32‘ E, 1810 m, 28-29. XII 2010.

Remarks: This is the first record from Malawi. Earlier known from Rwanda only (de Toulgoët, 1979; Goodger & Watson, 1995). The ♂ specimen from Malawi (fig. 2) shows some differences in the genitalia structure from the type; however, in the *Galtara* group ♂ genitalia are highly variable.

Karschiola Gaede, 1926

Die Gross-Schmett. Erde **14**: 112. Type species: *Caryatis holoclera* Karsch, 1894.

Karschiola holoclera (Karsch, 1894) (col. pl. 1: 3)

Caryatis holoclera Karsch, 1894, Ent. Nachr. **24**: 378-379.

Karschiola holoclera, Dubatolov (2009), Atalanta **40** (1/2): 287, pl. 25: 9.

Material: Malawi: 2 ♂♂, 1 ♀, South Malawi, Nsanje District, 125 km S Blantyre, Mwabvi Wildlife Reserve, 16° 39‘ S, 35° 03‘ E, 27 m, 10.XII.2010; Zimbabwe: 1 ♀, Manicaland, Selinda Mt., Chirinda Forest, 20°25‘ S, 32° 42‘ E, 1150 m, 7.-8.I 2011.

Remarks: This is the first record from Zimbabwe. Earlier known only from Tanzania and Malawi (Goodger & Watson, 1995; Dubatolov, 2009).

Paralpenus Watson, 1988 [1989]

Ent. scand. **19**: 263. Type species: *Hyphantria atripes* Hampson, 1909.

Paralpenus wintgensi (Strand, 1909)

Acantharctia wintgensi Strand, 1909; Dt. Ent. Z. Iris **22**: 113-114.

Paralpenus wintgensi z i m b a b w e i e n s i s **subspec. nov.** (col. pl. 1: 4)

Material: Holotype ♂, Zimbabwe, Manicaland Prov., Vukutu, 18° 21‘ 52“ S, 32° 36‘ 29“ E, 1900 m, 1.-3.XII.2010, V. Kovtunovich V. & P. Ustjuzhanin leg.

Description: Forewing length 17 mm. Palpi porrect, black. Head covered with dense light yellow hair-like scales. Antennae white with long black branches. Patagiae white, bordered with yellow, centered with a black dot. Tegulae white, without black dots. Abdomen yellow, but the first segment white. Forewing white with narrow yellow costal margin and a large number of small black dots similar to *Micralarctia punctulata* (Wallengren, 1860), including marginal (terminal) spots. Fringe yellowish. Hindwings white with a small black spot on the discal vein and the same size submarginal spot between A1 and CuP.

♂ genitalia (fig. 3): Uncus weakly constricted at base, tegumen and vinculum strongly constricted laterally. Valves slender, bifurcate apically. Juxta wide at base, narrower apically, constricted at middle part, strongly concave on apical edge. Saccus V-shaped with two additional lateral processes. Aedeagus narrow, apically with a row of small teeth. Vesica with a weaker dorsal spinulose cornuti patch, one more on a distal surface, and the third one on right side.

Remarks: In the ♂ genitalia of this new subspecies, the uncus and valve shape is similar to *P. w. wintgensi* Strand from Rwanda, but the tegumen/vinculum segment is strongly constricted laterally while in the nominotypical subspecies it is weakly constricted (Watson, 1989). The vesica differs significantly: in the nominotypical subspecies it bears one or two groups of cornutal spines (Watson, 1989), while in the new subspecies there is one more, the third group of cornuti. The forewing spot pattern also differs between two subspecies: there is a series of marginal (terminal) black spots, but no such series in the nominotypical subspecies. The distinguishing characters of the new subspecies might be considered by some to be of specific value.

Ustjuzhania Dubatolov, 2009

Atalanta **40** (1/2): 290. Type species: *Spilosoma lineata* Walker, 1855.

Ustjuzhania lineata (Walker, 1855) (col. pl. 1: 5)

Spilosoma lineata Walker, 1855, List Specimens lepid. Insects Colln Br. Mus. **3**: 672-673.

Material: Zimbabwe: 1 ♂, Manicaland, Selinda Mt., Chirinda Forest, 20° 25‘ S, 32° 42‘ E, 1150 m, 7.-8.I.2011.

Remarks: Widely distributed in South and East Africa, including Zimbabwe. The ♂ studied has the genitalia (fig. 6-7) similar to *U. l. malawica* Dubatolov, 2009, and not to the nominotypical subspecies from South Africa.

Ustjuzhania chionea (Hampson, 1900) (col. pl. 1: 6)

Diacrisia chionea Hampson, 1900, Ann. S. Afr. Mus. **2**: 56.

Material: Malawi: 3 ♂♂, South Malawi, Lake Malawi National Park, 70 km NW Mangochi, Monkey Bay, 14° 03‘ S, 34° 53‘ E, 534 m, 16.XII.2010; Zimbabwe: 2 ♂♂, 35 km S-E Masvingo, Kyle Recreational Park, 20° 13‘ S, 31° 00‘ E, 1050 m, 9.I.2011.

Remarks: This is the first published record from Zimbabwe; however, this taxon is represented in most Zimbabwean collections (P. Haynes, pers. comm.). Formerly known from South Africa (Goodger & Watson, 1995) and Malawi (Dubatolov, 2009). Specimens from both localities do not differ in the ♂ genitalia structure (fig. 4-5) from nominotypical examples from South Africa.

Popoudina Dubatolov, 2006

Nachrichten des Entomologischen Vereins, Apollo **27** (3): 140-142. Type species: *Estigmene pamphilia* Kiriakoff, 1958.

Popoudina k o v t u n o v i t c h i **spec. nov.** (col. pl. 1: 7-9)

Material: Holotype ♂, Zimbabwe, 35 km S-E Masvingo, Kyle Recreational Park, 20° 13‘ 11“ S, 31° 00‘ 15“ E, 1050 m, 9.I.2011, V. Kovtunovich V. & P. Ustjuzhanin leg. Preserved in SZMN. Paratypes: 2 ♀♀, the same locality and date as the holotype; 1 ♀, Zimbabwe, 20 km S Banket, Great Dyke, 17° 32‘ 22“ S, 30° 35‘ 34“ E, 1480 m, 5.I.2011, leg. V. Kovtunovich & P. Ustjuzhanin.

Description: Forewing length 15 mm in ♂ and 18-20 mm in ♀♀. Palpi porrect, twice longer than scales on frons, black, but yellow basally. Antennae yellowish grey, with long branches in male and short branches in females. Thorax and abdomen yellow, the latter with dorsal and lateral rows of black dots. Femorae yellow, tibiae and tarsi black. Male forewings broad, yellow with a small black point at lower angle of cell. Hindwings yellow with scarce greyish scales in postdiscal part. ♀ forewings more elongate than in ♂; with partly black veins in addition to black point at lower angle of cell.

♂ genitalia (fig. 8): Uncus broad, heavily sclerotized and bifid, with three branches on each side; the dorsal is separate and curved at its base, two others located on apical part of a flat processus the upper one is stronger and longer than the other one. Vinculum broadly semicircular, saccus as a sharp triangle. Valvae simple, digitate, slightly inward curved, with a costal-basal part separated from main part of valva and fused with vinculum. Aedeagus short, nearly straight, with a globular vesica with only a single sclerotized plate.

Remarks: Among the known *Popoudina* species (some Afrotropical *Estigmene* species should be transferred to *Popoudina*, but their genitalia are still not known), *P.* (*Pseudopopoudina*) *brosi* de Toulgoët, 1986 from Tanzania has uncus not divided longitudinally (fig. 9), in other *Popoudina* species it is divided longitudinally. In *P. leighi* (Rothschild, 1910) (fig. 10) from South Africa uncus is

long, broad, but with a distinct apical notch. *Popoudina pamphilia* (Kiriakoff, 1952) (fig. 11) from Kenya, Uganda and Rwanda has the uncus with two branches on each side. *Popoudina linea* (Walker, 1855) (fig. 12) and similar *P. lemniscata* (Distant, 1898) (fig. 13) from South Africa that might be conspecific with *P. linea* Wlk., have the uncus with a pair of spines on each side dorsally, and a triangular processus ventrally; most probably, *P. lemniscata* Dist. is only a dark form of *P. linea* Wlk. *Popoudina aliena* (Kiriakoff, 1954) (fig. 14) from P. R. Congo (Zaire) has three long narrow uncus processes on each side. So, all the mentioned species show the uncus arming different from the new species.

Eyralpenus Butler, 1875

Cistula Ent. **2**: 35. Type species: *Spilosoma testacea* Walker, 1855.

Eyralpenus scioana (Oberthür, 1879 [1880]) (col. pl. 1: 10)

Cycnia scioana Oberthür, 1879 [1880], Ann. Mus. Genov. 15: 176-177 (48-49), t. 1: 8.

Material: Malawi: 4 ♂♂, North Malawi, Rumphi District, Nyika National Park, 10° 41-44‘ S, 33° 39-40‘ E, 1923-1961 m, 23.-25. XII.2010; Zimbabwe: 1 ♂, Manicaland Prov., Bvumbe/Bunga Forest, 19° 07‘ S, 32° 46‘ E, 1650 m, 4.-5.XII.2010.

Remarks: Widely distributed in South and East Africa (Goodger & Watson, 1995), including Zimbabwe (Pinhey, 1975).

Eyralpenus k o v t u n o v i t c h i **spec. nov.** (col. pl. 1: 11-12)

Material: Holotype ♂, Malawi, North Malawi, Rumphi District, Nyika National Park, 10° 43‘ 40“ S, 33° 39‘ 11“ E, 1923 m, 23.-24. XII.2010, V. Kovtunovich V. & P. Ustjuzhanin leg. Preserved in SZMN. Paratype: 1 ♂, Malawi, North Malawi, 100 km N Mzuzu, Uzumara Mt., 10° 52‘ 18“ S, 34° 07‘ 45“ E, 1931 m, 21.-22.XII.2010, V. Kovtunovich V. & P. Ustjuzhanin leg.

Description: Forewing length 16-17 mm. Palpi porrect, black. Head covered with dark buff hair-like scales. Antennae lighter, yellow; branches not longer than in *E. testacea* (Walker, 1855). Thorax dark buff; patagiae without black spots, tegulae centered with small black spots. Abdomen dark yellow with lateral and dorsal rows of black spots. Forewing dark buff with numerous black dots typical of *E. testacea* (Wlk.) and *E. scioana* (Oberthür, [1880]); but with two larger black spots of a postdiscal row between veins R and M1, and CuA-CuP. Hindwings yellow, much lighter than forewings and with small black spots on discal vein and along external margin. ♂ genitalia (fig. 15): Uncus narrow, flat at dorsal surface, with an upturned and curved hook-like apex. Tegumen upturned proximally. Valves narrow, finger-like, slightly curved, their enlarged basal part fused with tegumen. Juxta large, broad. Saccus triangular. Aedeagus straight, enlarged towards apex. Vesical oval, without cornuti.

Remarks: By the wing pattern, the new species resembles dark specimens of *E. scioana* (Obth.) but the forewings are much darker, with two larger spots of the postdiscal row. The antennae branches are noticeably shorter than in *E. scioana* (Obth.), and much lighter than in *E. testacea* (Wlk.). The ♂ genitalia differs from all the known species of the genus and closely resemble those of *Epilacydes* Butler, 1875 species (fig. 16) but without a bulbous crook of the uncus. However, in *E. **kovtunovitchi*** **spec. nov.** the uncus is similar (but less curved) than in *E. scioana* (Obth.); the main difference is the much smaller size of basal parts of valves which are fused to the tegumen branches in the new species and enlarged into long curved narrow processes in *E. scioana* (Obth.).

Subgenus ***Pareyralpenus*** Dubatolov & Haynes, 2008

Atalanta **39** (1-4): 357-358. Type species: *Spilosoma quadrilunata* Hampson, 1901.

Eyralpenus (***Pareyralpenus***) ***meinhofi*** (Bartel, 1903) **stat. rev.** (col. pl. 1: 13-19, col. pl. 2: 20-22)

Spilosoma meinhofi Bartel, 1903; Dt. Ent. Z. Iris **16**: 213-214.

= *Amsacta atricrures* Hampson, 1916 **syn. nov.**, Novitates Zoologicae **23**: 237.

= *Estigmene melanocera* Hampson, 1916 **syn. nov.**, Novitates Zoologicae **23** (2): 237-238.

= *Estigmene metaxantha* Hampson, 1920 **syn. nov.**, Cat. Lep. Phalaenae Br. Mus. (Suppl.) **2:** 436, pl. LXIX: 6.

Eyralpenus (*Pareyralpenus*) *melanocera*, Dubatolov (2009), Atalanta **40** (1/2): 292, pl. 27: 27.

Material: Malawi: 2 ♂♂, 1 ♀, South Malawi, Mangochi District, 25 km E Mangochi, Manizimu Forest Reserve, Uzuzu Hill, 14° 25‘ S, 35° 23‘ E, 1010 m, 14.-15.XII.2010; 1 ♀, Central Malawi, Ntchisi District, 10 km E Ntchisi, Ntchisi Forest Reserve, 13° 22‘ S, 34° 01‘ E, 1527 m, 17.XII.2010; 5 ♂♂, 1 ♀, North Malawi, 12 km N Mzuzu, Nkhorongo, 11° 22‘ S, 33° 58‘ E, 1370 m, 18.-20.XII.2010; 1 ♂, North Malawi, Chitipa District, Mughesse Forest, 60 km NW Chitipa, 09° 39‘ S, 33° 32‘ E, 1810 m, 28.-29.XII.2010; Zambia: 1 ♂, Northern Zambia Prov., Mutinondo Wilderness, 12° 27‘ S, 31° 17‘ E, 1450 m, 1.I.2011; Zimbabwe: 1 ♂, Manicaland Prov., Bvumbe/Bunga Forest, 19° 07‘ S, 32° 46‘ E, 1650 m, 4.-5.XII.2010; 1 ♂, Manicaland, Selinda Mt., Chirinda Forest, 20° 25‘ S, 32° 42‘ E, 1150 m, 7.-8.I.2011.

Remarks: The species displays considerable variation in the forewing pattern (from well expressed to entirely absent) and expression of the black dots on the tegulae and patagiae; however, all specimens studied from Zambia and Zimbabwe do not differ from those from Malawi in the ♂ genitalia structure (figs. 17-20), formerly identified as *E.* (*P.*) *melanocera* (Hmps.) (Dubatolov, 2009). However, there are three species - *E. meinhofi* (Bartel, 1903) (col. pl. 1: 13) from Tanzania (cited by Goodger & Watson, 1995 from Zambia also), *E. metaxantha* (Hampson, 1920) (col. pl. 1: 16) from Zambia (cited by Goodger & Watson, 1995 from Angola and Zaire also), and *E. atricrures* (Hampson, 1916) (col. pl. 1: 14) from north-eastern Tanzania, which fall into the infraspecific variability in the wing pattern of *E.* (*Pareyralpenus*) *meinhofi* (Bartel, 1903) and should be treated as its synonyms. There remains the possibility that some other *Eyralpenus* species might be included into this species as well.

Seydelia Kiriakoff, 1952

Bull. Ann. Soc. r. ent. Belg. **88**: 40. Type species: *Seydelia celsicola* de Toulgoët, 1976.

Seydelia ellioti (Butler, 1896) (col. pl. 2: 23)

Callarctia ellioti Butler, 1896, Proc. Zool. Soc. London **1895**: 739, pl. XLIII: 6.

Material: Malawi: 1 ♂, North Malawi, Chitipa District, Mughesse Forest, 60 km NW Chitipa, 09° 39‘ S, 33° 32‘ E, 1810 m, 28.-29.XII.2010.

Remarks: This is the first record from Malawi. Formerly known from Uganda (Butler, 1896), Zaire (Kiriakoff, 1963), Rwanda (Dubatolov, 2006) and South Africa (Pinhey, 1975).

Rhodogastria Hübner, [1819]

Verz. bekannter Schmett.: 172. Type species: *Phalaena amasis* Cramer, 1779 [1780].

Rhodogastria similis (Möschler, 1884) (col. pl. 2: 24-25)

Dionychopus similis Möschler, 1884; Verhandl. K.K. zool.-bot. Ges. Wien **33**: 288.

Material: Zimbabwe: 5 ♂♂, Manicaland Prov., Vukutu, 18° 22‘ S, 32° 36‘ E, 1900 m, 1.-3.XII.2010; 1 ♂, 1 ♀, Manicaland, Selinda Mt., Chirinda Forest, 20° 25‘ S, 32° 42‘ E, 1150 m, 7.-8.I.2011.

Remarks: Formerly known from South Africa (Goodger & Watson, 1995) and Zimbabwe [Pinhey, 1975, as *Dionychopus amasis* (Cramer), incorrect determination].

Teracotona Butler, 1878

Subgenus ***Teracotona*** Butler, 1878

Proc. Zool. Soc. London **1878**: 382. Type species: *Aloa rhodophaea* Walker, 1864 [1865].

Teracotona* (*Teracotona*) *rhodophaea (Walker, [1865]) (col. pl. 2: 26)

Aloa rhodophaea Walker, [1865], List Specimens lepid. Insects Colln Br. Mus. **31**: 302-303.

Material: Zimbabwe: 1 ♀, 20 km S Banket, Great Dyke, 17° 32‘ S, 30° 36‘ E, 1480 m, 5.I.2011; 1 ♂, Manicaland, Selinda Mt., Chirinda Forest, 20° 25‘ S, 32° 42‘ E, 1150 m, 7.-8.I.2011; 1 ♂, 35 km S-E Masvingo, Kyle Recreational Park, 20° 13‘ S, 31° 00‘ E, 1050 m, 9.I.2011.

Remarks: Goodger & Watson (1995) cited this species as restricted to South Africa, including Botswana (the type locality). However, it is widely distributed in East Africa: Namibia (Kühne, 2007), Zimbabwe (!), Kenya (de Toulgoët, 1977), Somali (ssp. *pallidior* Niepelt, 1937), Djibouti (de Toulgoët, 1977).

Subgenus ***Neoteracotona*** Dubatolov, 2009

Atalanta **40** (1/2): 293. Type species: *Seirarctia proditrix* Berio, 1939.

***Teracotona* (*Neoteracotona*) *k o v t u n o v i t c h i* spec. nov.** (col. pl. 2, fig. 27-28)

Material: Holotype ♂, Malawi, South Malawi, Mt. Zomba, 70 km N Blantyre, 15° 21‘ 06“ S, 35° 17‘ 27“ E, 1561 m, 13.XII.2010, V. Kovtunovich & P. Ustjuzhanin leg. Paratypes 1 ♂, 1 ♀, the same locality and data, as in the holotype.

Description: Forewing length 20 mm in ♂, 22 mm in ♀. Palpi porrect, black. Antennae flagellate, black. Head covered with whitish hair-like scales. Thorax covered with light brown and whitish scales; tegulae and patagiae without black dots. Abdomen yellow-orange with two dorsal rows of black streakes and two lateral rows of black dots. Forewings whitish covered with marbled light brown streakes most intensive in cell, around middle part of anal vein and in postdiscal zone. In the paratype ♂, such marbled streakes form diffuse antemedial and postmedial bands. Discal vein with a clear black dot. Forewing fringe brown with whitish scales. Hindwings yellowish-orange with a black spot on a discal vein and a series of black submarginal spots; better expressed from tornus to vein CuA. Hindwing fringe yellowish-orange. Forewing underside carmine-red with a black spot on discal vein and brown margination. Hindwing underside yellowish-orange with the same black spots. Abdomen yellowish-orange, slightly brighter than hindwings, dorsally with two rows of black streakes and lateral rows of black spots.

♂ genitalia (fig. 21): Uncus short, narrowly triangular, tegumen not broad, without proximal collar. Valvae as in other *Neoteracotona* species with a broader basal part and a long finger-like apical process. Inner margin of valva basal part slightly concave. Juxta broad. Saccus broad oval. Aedeagus broad; vesica bag-like with a basal side covered with small granulation.

Remarks: On forewing pattern the new species resembles *T.* (*Neoteracotona*) *alicia* (Hampson, 1911) from Kenya. However, the striated pattern of forewings in this species (Gaede, 1926, fig. 15e) is regular; the patagiae with small black spots basally; the black spot on the forewing is located not on the discal vein but in the postmedial part of the wing; the hindwings tinged with crimson basally. *T.* (*N.*) *proditrix* (Berio, 1939) and *P.* (*N.*) *pruinosa* de Joannis, 1912 from Ethiopia lack any black spots on the dorsal side of the abdomen and hindwings. Other *Neoteracotona* species have clear bands and postdiscal spots on the forewings.

“***Teracotona***” ***homeyeri*** Rothschild, 1910 (col. pl. 2: 29-30)

Novit. Zool. **17**: 181, 18: pl. VI: 9, 12.

Material. Malawi: 1 ♀ North Malawi, Rumphi District, Nyika N.P., 10° 44‘ S, 33° 39‘ E, 1923 m, 23.-24.XII.2010.

Remarks: This is the first record from Malawi; Zambia, Nyika Plateau (P. Haynes collection). Formerly known from Angola and Tanzania (Goodger & Watson, 1995). Probably, this species do not belong to *Teracotona* Btl.

Leucaloa Butler, 1875

Cistula Ent. **2**: 44. Type species: *Spilosoma eugraphica* Walker, 1864 [1865] (col. pl. 2: 30-31).

Leucaloa butti (Rothschild, 1910) **comb. nov.** (col. pl. 2: 32)

Diacrisia butti Rothschild, 1910; Novit. Zool. **17**: 126, pl. XIV: 42.

Material: South Africa: 1 ♂, Free State, 150 km SW of Bloemfontein, Tussen die Riviere G.R., Orange River, 16.I.2008; 2 ♂♂, [Orange] Free State, 100 km E of Colesberg, Tussen die Riviere N.R., Orange River, 30° 30’ S, 26° 08‘ E, 1280 m, 10.X.2009.

Remarks: The species is very similar to *L. eugraphica* (Walker, [1865]), but noticeably distinct by different curving of dark bands. Curves of a proximal band in *L. butti* (Rothsch.) are sharp and long, while those in *L. eugraphica* (Wlk.) are much shorter, so the distance between the apex of a curve and origin of Cu2 is noticeably longer than the width of this curve. Moreover, the curve of the distal band is sharp in *L. eugraphica* (Wlk.), and forewing discal spot is usually weaker. In ♂ genitalia (figs. 22-23), *L. eugraphica* (Wlk.) has longer apical part of valves, nearly straight basal part, but the most noticeable character is a presence of additional plate of small spine-like cornuti on vesica dorsal apex.

Leucaloa nyasica (Hampson, 1911) (col. pl. 2: 33)

Diacrisia nyasica Hampson, 1911; Ann. Mag. Nat. Hist. (8) **8**: 409.

Leucaloa nyasica, Dubatolov (2009), Atalanta **40** (1/2): 289, pl. 25, fig. 14.

Material: Zimbabwe: 3 ♂♂, 35 km S-E Masvingo, Kyle Recreational Park, 20° 13‘ S, 31° 00‘ E, 1050 m, 9.I.2011.

Remarks: This is the first record from Zimbabwe. Formerly known from Malawi (Goodger & Watson, 1995; Dubatolov, 2009) only. I have not found any noticeable differences in the ♂ genitalia structure between specimens from Zimbabwe and Malawi.

Afrospilarctia Dubatolov, 2006

Nachrichten des Entomologischen Vereins Apollo **27** (3): 143. Type species: *Euchaetes lucida* Druce, 1898 (col. pl. 2: 34).

***Afrospilarctia d e n t i v a l v a* spec. nov.** (col. pl. 2: 34)

Material: Holotype ♂, Zambia, Northern Zambia Prov., Mutinondo Wilderness, 12° 23‘ S, 31° 19‘ E, 1406 m, 2.I.2011, V. Kovtunovich & P. Ustjuzhanin leg.

Description: Forewing length 15 mm. Antennae black, their branch length like in other species of the genus. Eyes large, hemispherical, naked. Palpi short, porrect, slightly longer than scales on frons. Frons grayish in ventral half, yellow in upper half. Thorax bright yellow, without any dark spots. Fore tibiae narrow, with narrow apical spine; middle tibiae with one terminal pair, and hind tibiae with two pairs of spurs. Abdomen dark yellow above, with one dorsal and two lateral rows of black spots; ventral side of body, including legs, almost dark, blackish. Forewings bright yellow, with a single black spot on the posterior edge of the discal vein. Hingwings unicolorously light yellow.

♂ genitalia (fig. 24): Uncus broadly triangular, noticeably convex dorsally. Valve narrow and elongate, with two apical processes, and a row of uneven teeth on the inner side. Juxta slightly longer than its width. Aedeagus straight, with curved wide apical processus terminating into a short spine. Vesica twice longer than its width, with a row of spines on apical side, and two small patches of spines on the distal part.

Remarks: only two species were placed in *Afrospilarctia* Dubat. in the original description (Dubatolov, 2006) - *A. lucida* (Druce, 1898) from East Africa and *A. dissimilis* (Distant, 1898) from South Africa, later *A. unipuncta* (Hampson, 1905) was added (Dubatolov, 2009). All these species have entirely yellow frons (without grayish ventral half), no spines on the inner side of narrow valve terminating by two apical processes; so, they differ significantly from the new species. de Freina (2010) suggested adding *Creatonotus flavidus* Bartel, 1903 to *Afrospilarctia* Dubat., but this species have no apical spine on fore tibiae, colouration of the ventral side of abdomen is light, and different forewing pattern consisting of narrow dark veins and no spot on the discal vein.

***Ilemodes* Hampson, 1900**

Ann. S. Afr. Mus. **2**: 53. Type species: *Ilemodes heterogyna* Hampson, 1900.

***Ilemodes astriga* Hampson, 1916** (col. pl. 2: 35-36)

Novitates Zoologicae **23** (2): 240.

Material: Zimbabwe: 3 ♂♂, 2 ♀♀, Manicaland Prov., Vukutu, 18° 22‘ S, 32° 36‘ E, 1900 m, 1.-3.XII.2010.

Remarks: Formerly known from Ethiopia, Kenya, Uganda, Malawi, South Africa (Goodger & Watson, 1995) and Zimbabwe (Pinhey, 1975).

***Ilemodes isogyna* Romieux, 1935** (col. pl. 2: 37)

Mitt. Schweiz. Ent. Ges. **16**: 410-411, pl. IV: 6.

Material: Zimbabwe: 1 ♀, Manicaland Prov., Vukutu, 18° 22‘ S, 32° 36‘ E, 1900 m, 1.-3.XII.2010; Malawi: 1 ♀, North Malawi, Rumphi District, Nyika National Park, 10° 44‘ S, 33° 39‘ E, 1923 m, 23.-24.XII.2010.

Remarks: This is a first record for Zimbabwe and Malawi. Formerly recorded from DR of Congo (Zaire) and Tanzania (Goodger & Watson, 1995). In the original description only the ♂ was shown. The ♀ was found to be similar to the ♂ by wing pattern.

Several species of the *Radiarctia-Saenura* group collected by V. Kovtunovich & P. Ustjuzhanin remain unidentified awaiting a review of this group by P. Haynes.

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References

Bartel, M. (1903): Neue aethiopische Arctiidae der Sammlung des Kgl. Museums für Naturkunde in Berlin. - Dt. Ent. Z. Iris **16**: 170-220, Dresden.

Berio, E. (1939): Contributi alla conoscenza dei Lepidotteri eteroceri dell’Eritrea. - Mem. .Soc. Ent. Italiana **17**: 47-62, Genova.

Butler, A. G. (1875): Revision of the genus *Spilosoma* and allied groups of the family Arctiidae. - Cistula Ent. **2**: 21-44, London.

Butler, A. G. (1878): Description of new Lepidoptera of the group Bombycites, in the collection of the British Museum. - Proc. Zool. Soc. London **1878**: 381-388, London.

Butler, A. G. ([1896]): On Lepidoptera recently collected in British East Africa by Mr G. F. Scott Elliot. - Proc. Zool. Soc. London **1895**: 722-742, pl. XLII-XLIII, London.

Debauche, H. (1942): Lepidoptera Heterocera. - Exploration du Parc National Albert Mission G. F. de Witte (1933-1935) **41**: 1-28, Bruxelles.

Distant, W. L. (1898): Heterocera from the Transvaal. - Ann. Mag. Nat. Hist. (7) **1**: 116-118, London.

Druce, H. (1898): Descriptions of some new species of Heterocera. - Ann. Mag. Nat. Hist. (7) **1**: 207-215, London.

Dubatolov, V. V. (2006): New genera and species of Arctiinae from the Afrotropical fauna (Lepidoptera: Arctiidae). - Nachrichten des Entomologische Vereins Apollo **27** (3): 139-152, Frankfurt a. M.

Dubatolov, V. V. (2009): Reviewing the African tiger-moth genera: 1. A new genus, two new subgenera and a species list from the expedition to Malawi by V. Kovtunovich & P. Usthjuzhanin in 2008-2009, with further taxonomic notes on South African Arctiinae (Lepidoptera, Arctiidae: Arctiinae). - Atalanta **40** (1/2): 285-301, 352-355 (colour plates 24-27), Würzburg.

Freina J. J. de (2010): Beitrag zur afrotropische Arctiidaefauna: Bemerkungen und Korrekturen zum Artenspektrum der Genera *Creatonotos* Hübner, [1819], *Afrowatsonius* Dubatolov, 2006 und *Dubatolovia* **gen. n.** (Lepidoptera: Arctiidae, Arctiinae). - Nachrichten des Entomologische Vereins Apollo 31 (1/2): 1-8, Frankfurt a. M.

Gaede, M. (1926): Subfamilie: Spilosominae., in: Seitz, A. Die Gross-Schmetterlinge der Erde **14**: 94-107, Taf. 12-15, Stuttgart.

Goodger, D. T. & A. Watson (1995): The Afrotropical Tiger-Moths. An illustrated catalogue, with generic diagnosis and species distribution, of the Afrotropical Arctiinae (Lepidoptera: Arctiidae). - Apollo Books Aps., Stenstrup, Denmark.

Hampson, G. F. (1900): The moths of South Africa (Part 1). - Ann. South African Museum **2**: 33-66, London.

Hampson, G. F. (1905): Descriptions of new genera and species of Syntomidæ, Arctiadæ, Agaristidæ & Noctuidæ. - Ann. Mag. Nat. Hist. (7) **15** (89): 425-453. London.
Hampson, G. F. (1911): Descriptions of new genera and species of Syntomidæ, Arctiadæ, Agaristidæ, and Noctuidæ. - Ann. Mag. Nat. Hist. (8) **8**: 394-445, London.
Hampson, G. F. (1916): Descriptions of new species of the family Arctiadae in the British Museum. - Novit. Zool. **23** (2): 230-240, London.
Hampson, G. (1920): Catalogue of the Lepidoptera Phalaenae in the British Museum. London. Suppl. 2: 23+619 p., pl. 42-71, London.
Hübner, J. (1816-[1826]): Verzeichniss bekannter Schmetterlinge. - Augsburg.
Joannis, J. de. (1912): Materiali per lo studio della fauna Eritrea. - Bull. Soc. Ent. Italiana **14**: 115-147, Genova.
Karsch, F. (1894): Zwei neue ostafrikanische Arctiiden. - Entomologische Nachrichten 24: 376-379, Berlin.
Kiriakoff, S. G. (1952): Recherches sur les organes tympaniques des Lépidoptères, en rapport avec la classification. . Bull. Ann. Soc. Ent. Belgique **88**: 26-50, Bruxelles.
Kiriakoff, S. G. (1954): Hétérocères nouveaux ou peu connus du Katanga. - Rev. Zool. Botan. Africaines **50**: 169-188, Bruxelles.
Kiriakoff, S. G. (1963): Lepidoptera Heterocera. - Exploration du Parc National Albert **16** (2): 73-124, Bruxelles.
Kühne, L. (2007): Arctiidae (Lepidoptera: Noctuoidea). - Esperiana Memoir **4**: 215-218, 290-291, Schwanfeld.
Kühne, L. (2010): Taxonomische Ergebnisse der Bearbeitung der Nachfalterfauna des südlichen Afrikas (Lepidoptera: Noctuoidea). - Esperiana Memoir **5**: 433-456, Schwanfeld.
Möschler, E. B. (1884): Beiträge zur Schmetterligsfauna des Kafferlands. - Verhand. K.K. zool.-bot. Ges. Wien **33**: 267-310, Wien.
Niepelt, W. (1937): Bemerkungen über einige alte und neue Lepidopteren aus Italienisch-Somaliland. - Festschrift zum 60. Geburtstage von Professor Dr. Embrik Strand 3: 556-559, Riga.
Oberthür, C. (1879 [1880]): Spedizione Italiana nell'Africa Equatoriale. Resultati zoologici. I. Lepidotteri. - Ann. Museo Civico di Storia Nat. Genova **15**: 129-186, t. 1, map, Genova.
Pagenstecher, A. (1901): Beiträge zur Lepidopteren fauna des Malayischen Archipels. XIV. Über die Gattung *Nyctemera* Hübn. und ihre Verwandten. - Jahrbücher des Nassauischen Vereins für Naturkunde **54**: 91-179, Wiesbaden.
Pinhey, E. (1975): Moths of Southern Africa: descriptions and colour illustrations in 1183 species. - Tafelberg.
Romieux, J. (1935): Description de Lépidoptères nouveaux du Haut-Katanga (Congo Belge). - Mitt. Schweiz. Ent. Ges. **16**: 409-418, pl. IV, Schaffhausen.
Rothschild, W. (1910): Descriptions of new species of Arctianae in the Tring Museum. - Nov. Zool. **17** (1): 1-85, (2): 113-188, pl. XI-XIV, 18: pl. III-VI, London and Aylesbury.
Strand, E. (1909): Lepidoptera aus Deutsch-Ostafrika gesammelt von Herrn Oberleutnant Wintgens. - Dt. Ent. Zeit. Iris **22**: 104-121, Dresden.
Toulgoët, H. de (1977) Arctiidae et Nolidae [Missions entomologiques en Ethiopie]. - Mémoires du Muséum National d'Histoire Naturelle (N.S.) (A Zoologie) **105**: 68-81, pl. 14, Paris.
Toulgoët, H. de (1979) Description de nouvelles Arctiides africaines et révision partielle du genre *Galtara* F. Walker [Lep. Arctiidae Nyctemerinae] (4e note). - Bull. Soc. ent. France **83** (novembre-décembre): 213-224, Paris.
Toulgoët, H. de (1986) Description d'une nouvelle Arctiide africaine. (6e note) (Lepidoptera, Arctiidae). - Nouv. Rev. Ent. N.S. **3** (3): 309-311, Paris.
Walker, F. (1855): List of the Specimens of Lepidopterous Insects in the Collection of the British Museum **3**: 583-775. - London.
Walker, F. ([1863]): List of the Specimens of Lepidopterous Insects in the Collection of the British Museum **26**: 1480-1770. - London.
Walker, F. (1864 [1865]): List of the Specimens of Lepidopterous Insects in the Collection of the British Museum **31** (suppl.): 1-321, London.
Wallengren, H. D. J. (1860): Lepidopterologische Mitteilungen. - Wien. Ent. Monatschr. **4**: 161-176, Wien.
Watson, A. (1989): A review of *Spilosoma*-like Afrotropical tiger-moths (Lepidoptera: Arctiidae). - Ent. Scand. **19**: 251-291, Copenhagen.

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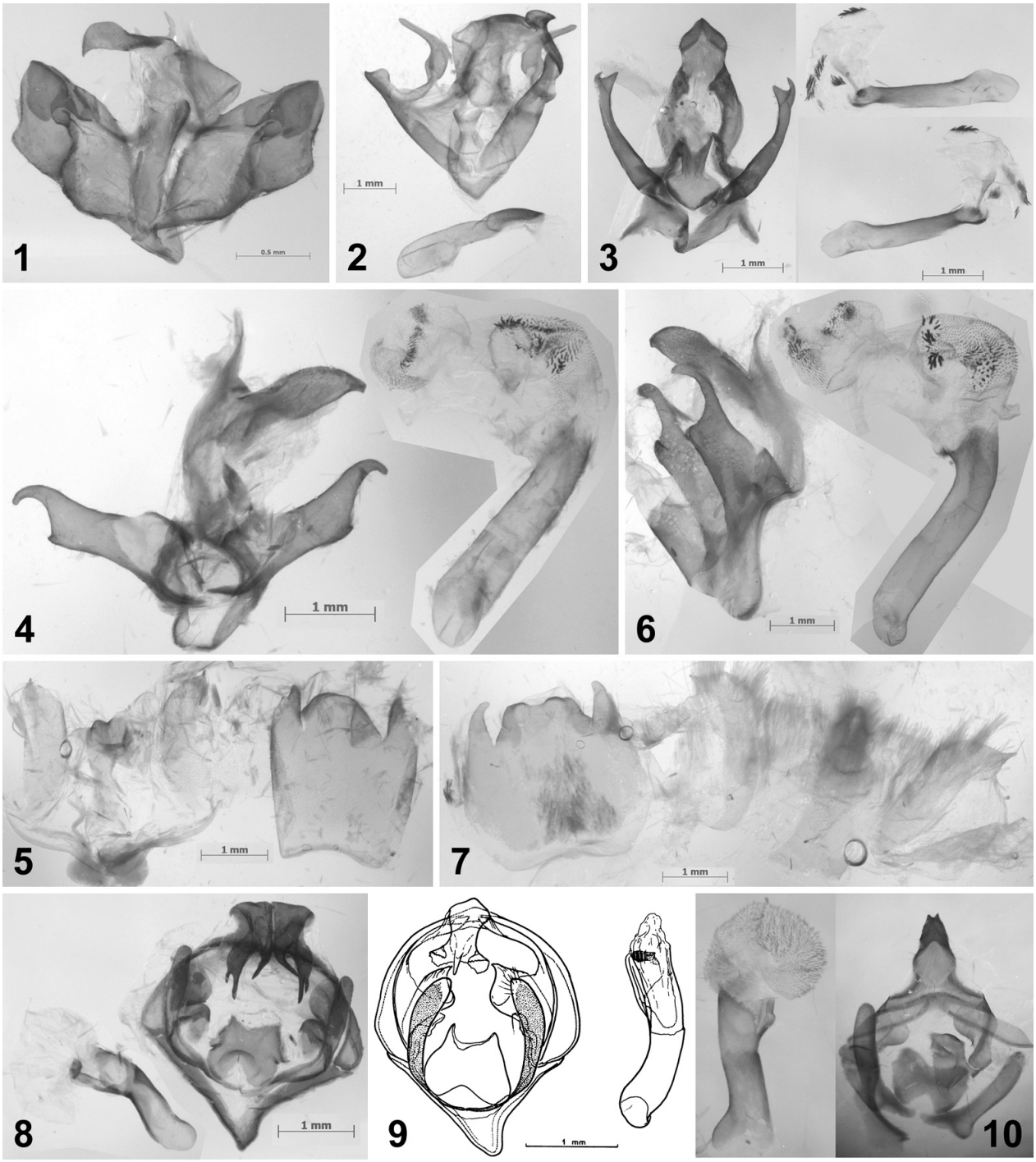
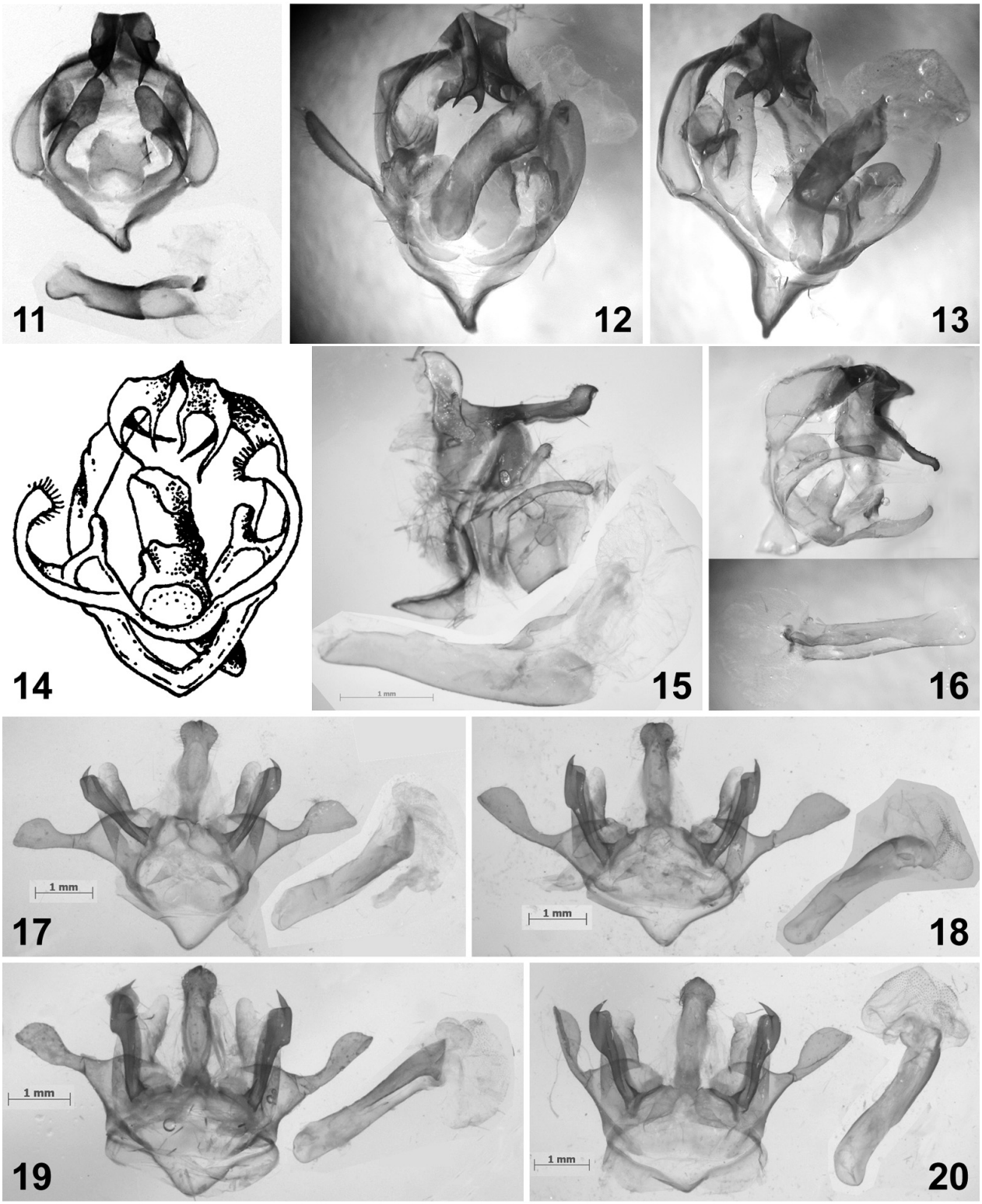


Figs 1-10: ♂♂ genitalia: (1) *Afrocoscinia aethiopica* (Kühne, 2009), South Africa, North Cape, 5 km SE of Springbok, Koperberg farm, S 29°43', E17°55', 760 m, 3.-4.X.2009, V. Kovtunovich & P. Ustjuzhanin leg.; (2) *Agaltara nebulosa* de Toulgoët, 1978, E Africa, North Malawi, Chitipa District, Mughesse Forest, 60 km NW Chitipa, 09°38'46"S, 33°32'13"E, 1810 m, 28.-29.XII.2010, V. Kovtunovich & P. Ustjuzhanin leg.; (3) *Paralpenus wintgensi* ***zimbabweiensis*** **subspec. nov.**, holotype, ♂, S Africa, Zimbabwe, Manicaland Prov., Vukutu, 18°21'52"S, 32°36'29"E, 1900 m, 1.-3.I.2010, V. Kovtunovich & P. Ustjuzhanin leg.; (4) *Ustjuzhania chionea* (Hampson, 1900), E Africa, South Malawi, Lake Malawi N.P., 70 km NW Mangochi, Monkey Bay, 14°03'27"S, 34°52'31"E, 534 m, 16.XII.2010, V. Kovtunovich & P. Ustjuzhanin leg.; (5) the same specimen, VIII abdominal sclerite; (6) *Ustjuzhania lineata malawica* Dubatolov, 2009, S Africa, Zimbabwe, Manicaland, Selinda Mt., Chirinda Forest, 20°24'36"S, 32°41'57"E, 1150 m, 7.-8.I.2011, V. Kovtunovich & P. Ustjuzhanin leg.; (7) the same specimen, VIII abdominal sclerite; (8): *Popoudina* ***kovtunovitchi*** **spec. nov.**, holotype, S Africa, Zimbabwe, 35 km S-E Masvingo, Kyle Recreational Park, 20°13'11"S, 31°00'15"E, 1050 m, 9.I.2011, V. Kovtunovich & P. Ustjuzhanin leg.; (9): *Popoudina* (*Pseudopopoudina*) *brosi* (de Toulgoët, 1986), from the original description; (10) *Popoudina leighi* (Rothschild, 1910), South Africa, Natal.



Figs 11-20: ♂♂ genitalia: (11) *Popoudina pamphilia* (Kiriakoff, 1958), Rwanda, Butare, II 1977, A. Popoudina leg.; (12) *Popoudina linea* (Walker, 1855), South Africa, Natal, Pineton, G. H. Burn coll.; (13) *Popoudina lemniscata* (Distant, 1898), South Africa, Natal, Weenen, G. H. Burn coll.; (14) *Popoudina aliena* (Kiriakoff, 1954), from pl. II: 21 from the original description; (15) *Eyralpenus* ***kovtunovitchi*** **spec. nov.**, holotype, S Africa, Zimbabwe, 35 km S-E Masvingo, Kyle Recreational Park, 20°13'11"S, 31°00' 15" E, 1050 m, 9.I.2011, V. Kovtunovich & P. Ustjuzhanin leg.; (16) *Epilacydes scita* (Walker, [1865]), Guinée Franç., Conakry: Camayen, 25.V.1927, Il. Ivanov leg.; (17) *Eyralpenus* (*Pareyralpenus*) *meinhofi* (Bartel, 1903), E Africa, North Malawi, 12 km N Mzuzu, Nkhorongo, 11°22'S, 33°58'E, 1370 m, 18.-20.XII.2010, V. Kovtunovich & P. Ustjuzhanin leg.; (18) *Eyralpenus* (*Pareyralpenus*) *meinhofi* (Bartel, 1903), E Africa, Zambia, Northern Zambia Prov., Mutinondo Wilderness, 12°27'S, 31°17'E, 1450 m, 1.I. 2011, V. Kovtunovich & P. Ustjuzhanin leg.; (19) *Eyralpenus* (*Pareyralpenus*) *meinhofi* (Bartel, 1903), S Africa, Zimbabwe, Manicaland Prov., Bvumbe/Bunga Forest, 19°07'S, 32°46'E, 1650 m, 4.-5.XII.2010, V. Kovtunovich & P. Ustjuzhanin leg.; (20) *Eyralpenus* (*Pareyralpenus*) *meinhofi* (Bartel, 1903), S Africa, Zimbabwe, Manicaland,Selinda Mt., Chirinda Forest, 20°25'S, 32° 42'E, 1150 m, 7.-8.I.2011, V. Kovtunovich & P. Ustjuzhanin leg.

Figs 21-24: ♂♂ genitalia: (21) *Teracotona* (*Neoteracotona*) ***kovtunovitchi* spec nov.**, holotype, Malawi, South Malawi, Mt. Zomba, 70 km N Blantyre, 15°21‘06“S, 35°17‘27“E, 1561 m, 13.XII.2010, V. Kovtunovich & P. Ustjuzhanin leg.; (22) *Leucaloa eugraphica* (Walker, 1864 [1865]), South Africa, Kwa Zulu-Natal, Vernon Crookes National Reserve, 60 km SW of Durban, 25.-25.I.2008, P. Ustjuzhanin leg.; (23) *Leucaloa butti* (Rothschild, 1910), South Africa, Free State, 150 km SW of Bloemfontein, Tussen die Riviere G. R., Orange River, 16.I.2008, P. Ustjuzhanin leg.; (24) *Afrospilarctia* ***dentivalva* spec. nov.**, holotype, E Africa, Zambia, Northern Zambia Prov., Mutinondo Wilderness, 12°23‘S, 31°19‘E, 1406 m, 2.I.2011, V. Kovtunovich & P. Ustjuzhanin leg.

Colour plate 1

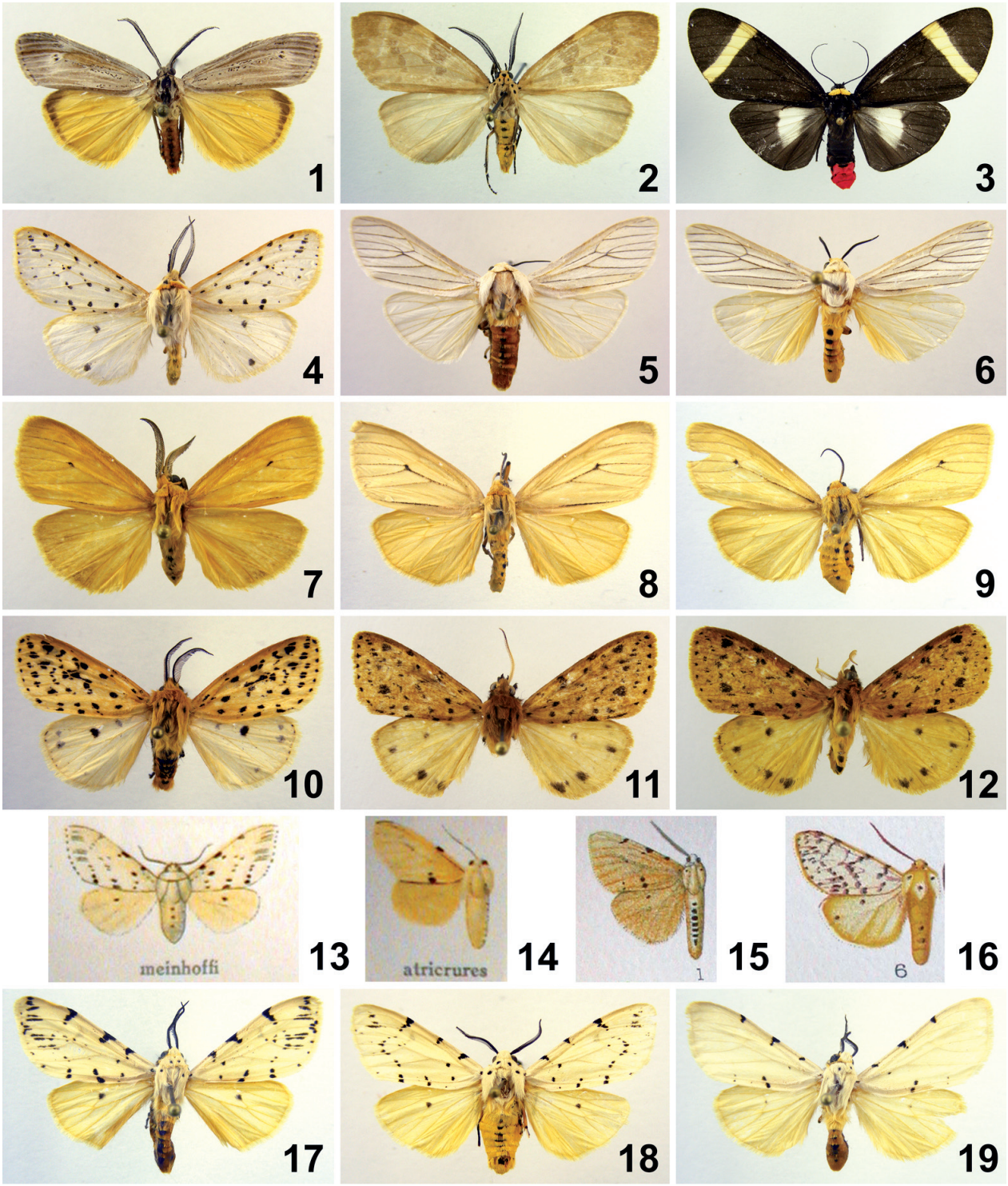


Fig. 1: *Afrocoscinia aethiopica* (Kühne, 2010), ♂, South Africa, North Cape, 5 km SE of Springbok, Koperberg farm, S 29°43', E 17°55', 760 m, 3.-4.X.2009. **Fig. 2**: *Agaltara nebulosa* de Toulgoët, 1978, ♂, E Africa, North Malawi, Chitipa District, Mughesse Forest, 60 km NW Chitipa, 09°38'46"S, 33°32'13"E, 1810 m, 28-29.XII 2010. **Fig. 3**: *Karschiola holoclera* (Karsch, 1894), ♀, S Africa, Zimbabwe, Manicaland, Selinda Mt., Chirinda Forest, 20°24'36"S, 32°41'57"E, 1150 m, 7.-8.I.2011. **Fig. 4**: *Paralpenus wintgensi* ***zimbabweiensis subspec. nov.***, holotype ♂, S Africa, Zimbabwe, Manicaland Prov., Vukutu, 18°21'52"S, 32°36'29"E, 1900 m, 1.-3.I. 2010. **Fig. 5**: *Ustjuzhania lineata malawica* Dubatolov, 2009, ♂, S Africa, Zimbabwe, Manicaland, Selinda Mt., Chirinda Forest, 20°24'36"S, 32°41'57"E, 1150 m, 7.-8.I. **Fig. 6**: *Ustjuzhania chionea* (Hampson, 1900), ♂, E Africa, South Malawi, Lake Malawi N.P., 70 km NW Mangochi, Monkey Bay, 14°03'27"S, 34°52'31"E, 534 m, 16.XII.2010. **Fig. 7**: *Popoudina* ***kovtunovitchi* spec. nov.**, holotype ♂, S Africa, Zimbabwe, 35 km S-E Masvingo, Kyle Recreational Park, 20°13'11"S, 31°00'15"E, 1050 m, 9.I.2011. **Fig. 8**: *Popoudina* ***kovtunovitchi* spec. nov.**, paratype ♀, S Africa, Zimbabwe, 20 km S Banket, Great Dyke, 17°32'22"S, 30°35'34"E, 1480 m, 5.I.2011. **Fig. 9**: *Popoudina* ***kovtunovitchi* spec. nov.**, paratype, ♀, S Africa, Zimbabwe, 35 km S-E Masvingo, Kyle Recreational Park, 20°13'11"S, 31°00'15"E, 1050 m, 9.I.2011. **Fig. 10**: *Eyralpenus scioana* (Oberthür, 1879 [1880]), ♂, S Africa, Zimbabwe, Manicaland Prov., 1650 m, Bvumbe/Bunga Forest, 19°07'14"S, 32°46'10"E, 4.-5.XII.2010. **Fig. 11**: *Eyralpenus* ***kovtunovitchi* spec. nov.**, holotype ♂, E Africa, North Malawi, 100 km N Mzuzu, Uzumara Mt., 10°52'18"S, 34°07'45"E, 1931 m, 21.-22.XII.2010. **Fig. 12**: *Eyralpenus* ***kovtunovitchi* spec. nov.**, paratype ♂, E Africa, North Malawi, Rumphi District, Nyika N.P., 10°43'40"S, 33°39'11"E, 1923 m, 23.-24.XII.2010. **Fig. 13**: *Eyralpenus meinhofi* (Bartel, 1903), ♂, fig. 12h from Gaede (1926). **Fig. 14**: *Eyralpenus atricrures* (Hampson, 1916), ♂, fig. 15a from Gaede (1926). **Fig. 15**: *Eyralpenus melanocera* (Hampson, 1916), ♂, pl. LXII: 1 from Hampson (1920). **Fig. 16**: *Eyralpenus metaxantha* (Hampson, 1920), ♂, pl. LXIX: 6 from Hampson (1920). **Fig. 17**: *Eyralpenus meinhofi* (Bartel, 1903), ♂, E Africa, North Malawi, 12 km N Mzuzu, Nkhorongo, 11°22'S, 33°58'E, 1370 m, 18.-20.XII.2010. **Fig. 18**: *Eyralpenus meinhofi* (Bartel, 1903), ♂, E Africa, South Malawi, Mangochi District, 25 km E Mangochi, Manizimu Forest Reserve, Uzuzu Hill, 14°24'46"S, 35°22 42"E, 1010 m, 14.-15.XII.2010. **Fig. 19**: *Eyralpenus meinhofi* (Bartel, 1903), ♂, E Africa, North Malawi, 12 km N Mzuzu, Nkhorongo, 11°22'S, 33°58'E, 1370 m, 18.-20.XII.2010. All originals V. Kovtunovich & P. Ustjuzhanin leg.

Colour plate 2

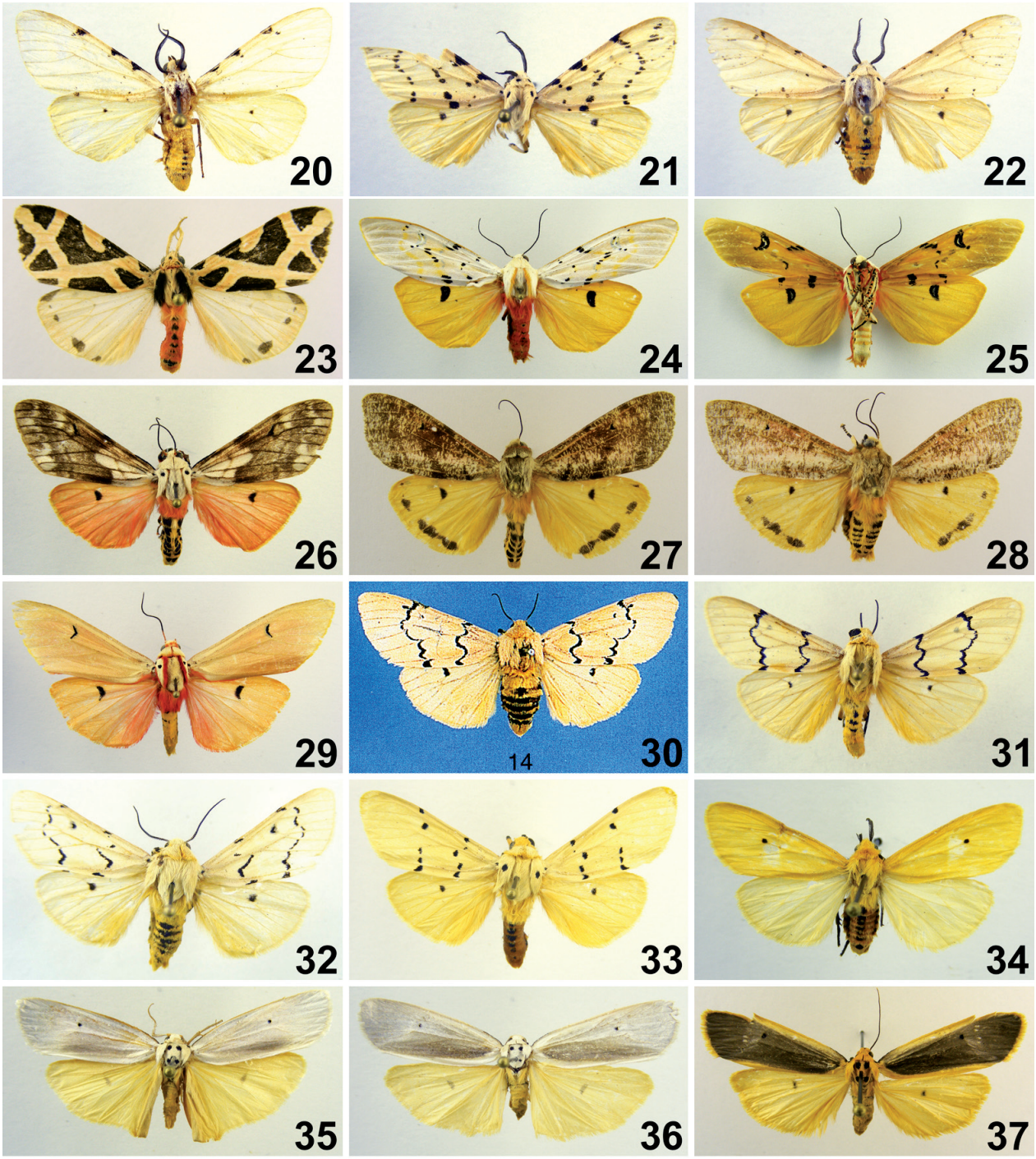


Fig. 20: *Eyralpenus meinhofi* (Bartel, 1903), ♂, E Africa, Zambia, Northern Zambia Prov., Mutinondo Wilderness, 12°27'10"S, 31°17'29"E, 1450 m, 1.I.2011. **Fig. 21**: *Eyralpenus meinhofi* (Bartel, 1903), ♂, S Africa, Zimbabwe, Manicaland Prov., 1650 m, Bvumbe/Bunga Forest, 19°07'14"S, 32°46'10"E, 4.-5.XII.2010. **Fig. 22**: *Eyralpenus meinhofi* (Bartel, 1903), ♂, S Africa, Zimbabwe, Manicaland, Selinda Mt., Chirinda Forest, 20°24'36"S, 32°41'57"E, 1150 m, 7.-8.I-2011. **Fig. 23**: *Seydelia ellioti* (Butler, 1896), ♂, E Africa, North Malawi, Chitipa District, Mughesse Forest, 60 km NW Chitipa, 09°38'46"S, 33°32'13"E, 1810 m, 28.-29.XII.2010. **Fig. 24, 25**: *Rhodogastria similis* (Möschler, 1884), upperside & underside, ♂, S Africa, Zimbabwe, Manicaland Prov., Vukutu, 18°21'52"S, 32°36'29"E, 1900 m, 1.-3.I.2010. **Fig. 26**: *Teracotona* (*Teracotona*) *rhodophaea* (Walker, [1865]), ♂, S Africa, Zimbabwe, Manicaland, Selinda Mt., Chirinda Forest, 20°24'36"S, 32°41'57"E, 1150 m, 7.-8.I.2011. **Fig. 27**: *Teracotona* (*Neoteracotona*) ***kovtunovitchi* spec. nov.**, holotype ♂, E Africa, South Malawi, Mt. Zomba, 70 km N Blantyre, 15°21'06"S, 35°17'27"E, 1561 m, 13.XII.2010. **Fig. 28**: *Teracotona* (*Neoteracotona*) ***kovtunovitchi* spec. nov.**, paratype ♂, E Africa, South Malawi, Mt. Zomba, 70 km N Blantyre, 15°21'06"S, 35°17'27"E, 1561 m, 13.XII.2010. **Fig. 29**: "*Teracotona*" *homeyeri* Rothschild, 1910, ♀, E Africa, North Malawi, Rumphi District, Nyika N.P., 10°43'40"S, 33°39'11"E, 1923 m, 23.-24.XII.2010. **Fig. 30**: *Leucaloa eugraphica* (Walker, 1864 [1865]), syntype ♀, from Goodger & Watson (1920: pl. 1: 14). **Fig. 31**: *Leucaloa eugraphica* (Walker, 1864 [1865]), ♂, South Africa, KwaZulu-Natal, Vernon Crookes National Reserve, 60 km SW of Durban, 25.-25.I.2008, P. Ustjuzhanin leg. **Fig. 32**: *Leucaloa butti* (Rothschild, 1910), ♂, South Africa, Orange Free State, 150 km S of Bloemfontaine, near Bethulie, Tussen die Riviere G. R., Orange river, 16.I.2008, P. Ustjuzhanin leg. **Fig. 33**: *Leucaloa nyasica* (Hampson, 1911), ♂, S Africa, Zimbabwe, 35 km S-E Masvingo, Kyle Recreational Park, 20°13'11"S, 31°00'15"E, 1050 m, 9.I.2011. **Fig. 34**: *Afrospilarctia* ***dentivalva* spec. nov.**, holotype ♂, E Africa, Zambia, Northern Zambia Prov., Mutinondo Wilderness, 12°23'S, 31°19'E, 1406 m, 2.I.2010. **Fig. 35**: *Ilemodes astriga* Hampson, 1916, ♂, S Africa, Zimbabwe, Manicaland Prov., Vukutu, 18°21'52"S, 32°36'29"E, 1900 m, 1.-3.I.2010. **Fig. 36**: *Ilemodes astriga* Hampson, 1916, ♀, S Africa, Zimbabwe, Manicaland Prov., Vukutu, 18°21'52"S, 32°36'29"E, 1900 m, 1.-3.I.2010. **Fig. 37**: *Ilemodes isogyna* Romieux, 1935, ♀, S Africa, Zimbabwe, Manicaland Prov., Vukutu, 18°21'52"S, 32°36'29"E, 1900 m, 1.-3.I.2010. All originals (as otherwise stated) V. Kovtunovich & P. Ustjuzhanin leg.

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A new *Olepa* Watson, 1980 species from South India

(Lepidoptera, Arctiidae)

by

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received 2.IV.2011

Abstract: A new *Olepa* Watson, 1980 species from the Coromandel Coast (south-eastern India) is described. It differs from other species of the genus by fused bands on forewings and the ♂ antennae with long branches. The ♂ genitalia is similar to *O. koslandana* Orhant, 1986, but valves are symmetrical, narrow, constricted subapically and bifurcated apically; vesica small with two spiny sclerotized plates.

During identification of very old Oriental Arctiinae specimens from Zoological Institute, St.-Petersburg, Russia collection (ZISP), a new *Olepa* species from South India was discovered. Description of this species is given below.

Olepa ***coromandelica*** **spec. nov.** (fig 1)

Material: Holotype ♂, "Reiche / Cormandel" (hand writing on a yellow ring, fig. 2) [Coromandel Coast is the south-eastern coast of the Hindustan Peninsula, between Cape Comorin and False Divi Point (Wikipedia.com)]. Preserved in ZISP. Paratype ♀, no label; probably the same locality and data (it was deposited with the ♂ specimen in ZISP).

Description: Forewing length 14 mm in ♂, 17 mm in ♀. The ♂ antennae with long branches; ♀ antennae shortly dentate. In the holotype, forewings are yellow with a pattern of a brown fissured ziczac-like and slightly diffused bands corresponding to the rows of spots of the typical *Olepa* species; two external bands are broken: the proximal one - between M3 and CuA, the distal one - twice before the wing hind angle; marginal spots are separate. Fringe chequered. Hindwings light yellow, with diffuse spots: a small discal spot, a row of four submarginal spots and a marginal band from wing apex to CuP. In ♀, forewing pattern fused, mainly in basal half; hindwings light brown with some darkening corresponding to the spots in the male specimen.

♂ genitalia (fig. 4): Tegumen narrow, without a proximal "collar", with parallel branches. Uncus narrow, also with parallel sides. Juxta with a broad basal half and narrow apical part. Valves symmetrical, consist of two parts: basal half with a long narrow branch from costa, apical half narrow, with parallel sides, slightly constricted before apex, apically bifurcated. Aedeagus thin, with an apical sclerotization and a thin apical spine directed distally. Vesica very small with two spiny sclerotized plates at its opposite sides. VIII abdominal tergite (fig. 5) has an U-shape distal edge; medial plate of the VIII abdominal sternite is tridental on its distal edge; lateral plates of VIII sternite enlarged distally into a trapezium.

Fig. 1: *Olepa* ***coromandelica*** **spec. nov.**, above - holotype ♂, India, "Reiche Cormandel" (ZISP), below - paratype ♀ (ZISP).
Fig. 2: *Olepa* ***coromandelica*** **spec. nov.**, holotype label.
Fig. 3: *Olepa koslandana* Orhant, 1986, ♂, no label, probably, India (ZISP).

♀ abdomen is partly destroyed inside (probably by a Dermestidae larva), so it was not dissected.

Remarks: The new species is closely related morphologically to *O. koslandana* Orhant, 1986 (fig. 6) from Sri Lanka and South India [this is the only related species of this genus from the *ricini* group (Orhant, 2000; Witt et al., 2005)]: both have a narrow uncus and very long basal processes of the valve costa (figs. 4, 6). However, the new species differs in external characters by long antennae branches (very short in *O. koslandana* Orh.), by presence of fused bands on the forewings (in *O. koslandana* Orh. and other species of the genus the forewing pattern consists of rows of spots), and a yellow ground colour of wings (in *O. koslandana* Orh. the forewings are light brown, the hindwings - usually red but sometimes yellowish-orange). The ♂ genitalia differs in both species as well: the valves of *O. koslandana* Orh. are noticeably broader, not constricted before the apex, the left one is apically bifurcated, the right one apically angled. The lateral plates of the VIII ♂ abdominal sternite of the new species (fig. 5) is similar only to those plates of *O. koslandana* Orh. (fig. 7) among all species of the genus; the central plate is tridental on the distal edge, while in *O. koslandana* Orh. it is bulbous.

According to the label and the kind of the pins, both specimens were collected in the middle of the XIXth century. Since the species was not collected for more than 150 years, it probably might be extinct.

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Arctiinae collection in ZISP, to Dr. O. E. Kosterin - for the languistic help.

References

Orhant, G. (1986): Deuxieme contribution a l'etude des lépidoptères heteroceres du sud-est Asiatique (1.) Le complexe d'especes '*ricini* Fabricius' (Arctiidae: Arctiinae). - Bull. Soc. Sci. Nat. France **50**: 9-22, Paris.

Orhant, G. (2000): Un nouvel *Olepa* de l'Inde (Lepidoptera, Arctiidae, Arctiinae). - Lambillionea **100** (2): 269-270, Bruxelles.

Watson, A., Fletcher, D. S. & I. W. B. Nye (1980): The Generic Names of Moths of the World **2**: 1-228. - Trustees of the Brit. Mus. (Nat. Hist.), London.

Witt, T. J., Müller, G. C., Kravchenko, V. D., Miller, M. A., Hausmann, A. & W. Speidel (2005): A new *Olepa* species from Israel (Lepidoptera: Arctiidae). - Nachrichtenblatt der Bayerischen Entomologen **54** (3/4): 101-115, München.

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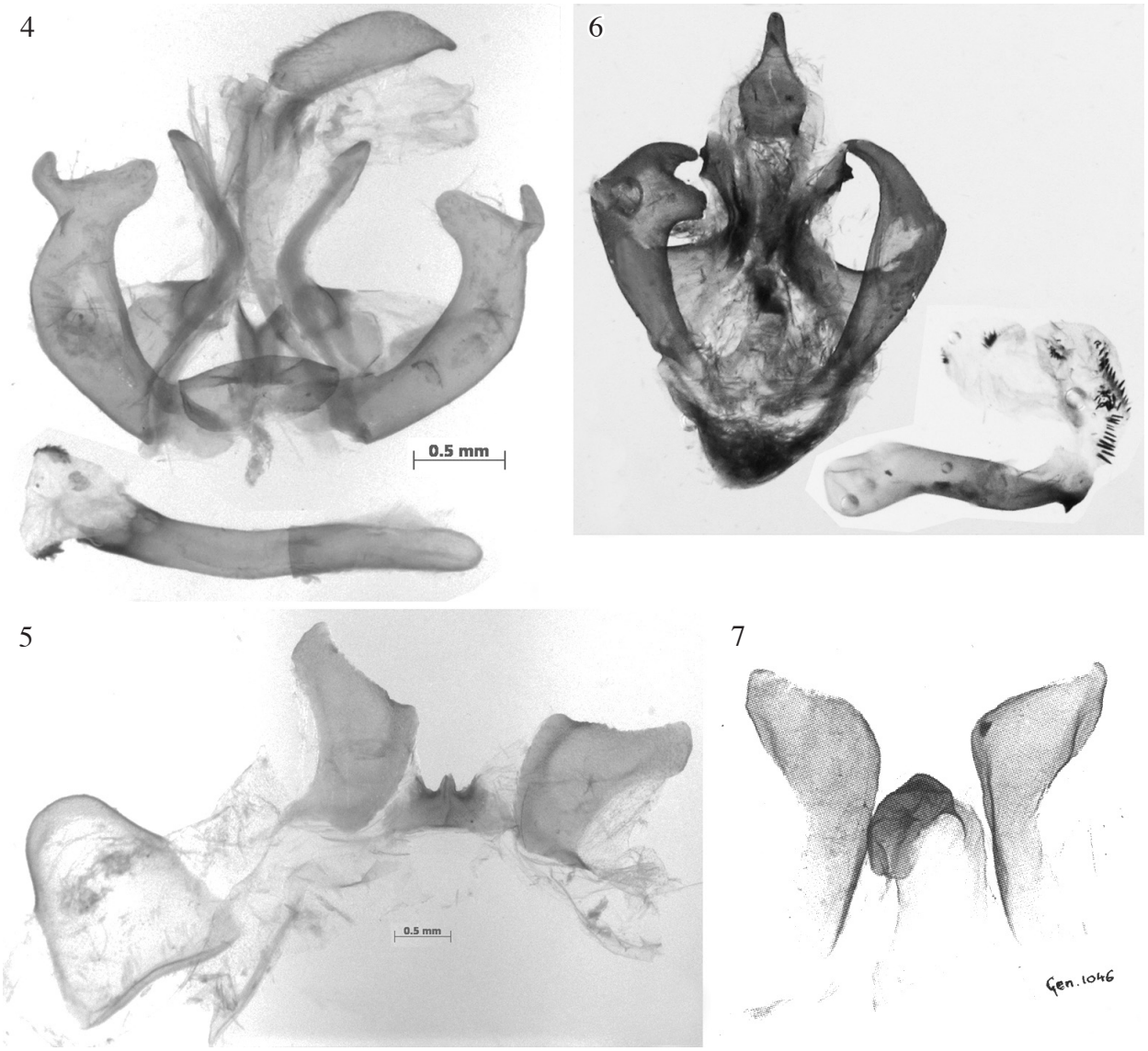

Fig. 4-7: ♂ genitalia of *Olepa* species:
Figs. 4, 5: *Olepa* ***coromandelica*** **spec. nov.**, holotype ♂, India, "Rieche Cormandel" (ZISP): 4 - genitalia, 5 - VIII abdominal sclerites (right - tergite, left - sternite).
Fig. 6: *Olepa koslandana* Orhant, 1986, no label, probably, India (ZISP).
Fig. 7: *Olepa koslandana* Orhant, 1986, VIII abdominal sternite, from Orhant (1986).

Buchbesprechung/Book-Review

Shuichi Kinoshita (2010): Structural colors in the realm of nature.
Osaka University, Japan, World Scientific Publishing, Singapore; xiv + 352; 2007
ISBN-13 978-981-270-783-3; ISBN-10 981-270-783-2, 23,5 cm x 16 cm, hard cover,
available: http://www.worldscibooks.com/nanosci/6496.html (prize indicated 121,-- US $; accessed: 2011.I.18)

Most people who like insects are amazed by the beauty of colours flashing in tropical butterfly wings or weevil elytras. The vivid blues of the Morphos, the changing purples of the Emperors, the brilliant greens of the Hairstreaks immediately captivate one.

But it is not generally known that these colours are produced in a fundamentally different way from production by pigments. Until now, only very few professional entomologists have really understood why the colours of a *Morpho*, or jewel beetles, are so flashy, and what the difference is between the blue of the *Morpho* species and that of the polyommatine Lycaenids. The results of experimental studies of them were naturally published in academic journals, and the work was described and illustrated in the dry language of physics and mathematics, with figures, micrographs and hieroglyphs of equations making it pretty inaccessible to most readers.

This book tries to cover all the results published in the many academic journals on the topic of structural colour in nature. It sets out to be a basic reference, where the reader can find the most up-to-date knowledge about all types of structure, produced by creatures, in the 'nano-realm', which have the capacity to manipulate light and so produce colour structurally, without or with the support of pigments.

The book tries to make the subject accessible to readers who are probably not physicists.

It has the following chapters:
- "Introduction" to the concept of structural colour and a review of the history of structural colour studies;
- "Fundamentals of Structural Coloration", where the essential physics and mathematics are set out, that are needed for understanding the science of how colours are produced structurally;
- "Butterflies and Moths", where there is a general introduction to Lepidoptera,and a special section on *Morpho* (one of the most intensively studied animal groups regarding structural colours) and an overview of structural colouration in butterflies and moths;
- "Beetles and Other Insects", where, after a general overview, there are special subchapters on beetles, damselflies and dragonflies, shield bugs and cicadas, and other insects;
- the chapters "Birds", "Fish", "Plants" and "Miscellaneous" (ie shells, spiders, marine animals) provide an impressive account of how widely structural colours occur in the living world;
- "Mathematical Background" gives the essential theoretical knowledge for calculating, estimating, modelling and working on the various phenomena caused by structural colours; this chapter is specially for the reader who wants to deepen his knowledge of the fundamental science of the topic.
- The closing chapters comprise: a "Bibliography; Appendix A - a list of "butterfly" (skippers and butterflies) and avian species quoted in papers on structural colours; Appendix B - colour plates of many species discussed in the book; "Index of Scientific Names" ; and "Subject Index".

I find this book an admirable work. Although certain chapters are difficult to comprehend, any scientist who works on structural colouration of biological origin will find it a most valuable resource. Any student intending to devote his or her future to the subject will find a lot inspiriting material in its pages. And as for entomologists, anyone wanting to study and understand seriously the colouration of the creatures they are studying, the book is simply a must. I certainly need one myself.

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